Selection and Implementation of Formulas for Production Line LCC Prognosis

Keywords: LCC, Ontology, Semantics, Advanced Software Platform, Production, Design, Manufacturing.

Problem: Life Cycle Costing is the cost of an asset, or its parts, throughout its life cycle, while fulfilling the performance requirements. LCC seeks to optimize the cost of acquiring, owning and operating physical assets over their useful lives. It enables comparative cost assessment and assists management in the decision-making process. The LCC calculation proves to be a tool of great value for the marketing of new solutions in the industry. By selecting and implementing appropriate formulas, an LCC Prognosis Environment for the production line will be created with the use of Anzo Enterprise. Anzo Enterprise enables users to link data from multiple Excel spreadsheets and relational databases together in real-time for data collection, collaboration, and reporting. The analysis conducted until now shows a clear need for fast estimation of LCC for different solutions proposed to the customer. With today's tools, the above estimation is extremely time-consuming and not flexible to changes. In the framework of LinkedDesign EU FP7 project, a new method for estimating LCC with the use of an underlying ontology, semantic technologies and visualization techniques will be introduced.

Project: In this project, the student will study state-of-the-art LCC, ontology models and tools and develop a prototype solution for semantic modeling of the LCC estimation using Anzo Enterprise. Experience for the EU FP7 funded project will be used and collaboration with COMAU Company, a world-wide leader in sustainable automation and service solutions, is envisaged.

Plan:

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<td>22.09.2014</td>
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1. Study the state-of-the-art in LCC. (22.09-26.09)
2. Study ontology modeling tools and Anzo Enterprise. (29.09-03.10)
3. Study and select the appropriate LCC formulas. (06.10-10.10)
4. Use Anzo Enterprise to define LCC datasets and implement the selected formulas. (13.10-31.10)
5. Apply the implemented model to LinkedDesign project. (03.11-21.11)
6. Compare and evaluate the model with the “as-is” solution. (24.11-20.12)
7. Write a final report. (January 2014)

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Duration: 4 months
Sections targeted: Mechanical Engineering

Abbreviations
EU: European Union
FP7: Framework Package 7
LCC: Life-Cycle Cost
KPI: Key Performance Indicator

Useful Links
LinkeDesign project: http://www.linkeddesign.eu/
Anzo Enterprise: http://www.cambridgesemantics.com/products/anzo-enterprise